

## Wet maize silage presents feeding challenges

**O**n many farms where harvest was delayed, maize silage has failed to deliver the usual boost in milk production. John Thomas, Biotalk's Regional Business Manager in the South East examines why this is and questions whether in some cases maize may no longer be worth the risk.

In two of the last three years, wet autumn weather has delayed maize harvest with implications for winter feeding and rotations. The problems were made worse this year with the slow rate of maturing in many crops which further delayed harvest,

While maize silage can usually be relied on to boost intakes and starch levels resulting in improved milk production from forage, this isn't proving to be the case this year.

While in many cases the average analysis looks fairly typical, 15% of samples have a dry matter less than 23% and these can present a real challenge with most of them being the late harvested crops.

There are a number of reasons why these later, wetter silages are not delivering better production:



1. The starch content is significantly lower, a consequence of crops being less mature
2. The starch has a higher level of degradability which means there is less by-pass starch with more digested in the rumen. This will increase the acidosis risk. Unlike the 'average' crops it is unlikely that starch degradability will increase much with time spent in the clamp.
3. Lower energy levels and lower glucogenic energy content mean cows in early lactation in particular will need extra starch in a rumen friendly form
4. The lower dry matter increases the risk of higher lactic acid content which will again increase acidosis risk
5. Higher NDF levels suggest there is less digestible fibre to help counter rumen fermentable starch levels.
6. Lower intake levels suggest cows may not be enthusiastic consumers of maize.

In the short term, the key to getting the most from maize this year will be to have the silage regularly analysed so you know exactly what is in the clamp and it's feed potential. This will allow you to supplement forages accurately and cost effectively. If rumen fermentable starch levels are high you will need to consider how you add starch to the diet. Ground and rapidly fermented cereals will not be a wise option.

Acidosis is likely to be an issue so it may be prudent and cost-effective to add a rumen specific yeast to the diet such as Biotalk SC Gold. Yeast improves rumen health by reducing lactic acid in

the rumen, in so doing increasing rumen pH and maintaining a more stable rumen environment.

### Time for a change?

Longer term, it might be time for farmers in marginal areas to seriously consider whether growing maize is worth the risk. While the benefits of including maize in the diet to stimulate intakes and increase starch levels are well known, they are only an advantage if a high quality forage can be produced.

If the consequence of the growing season is a late-harvested, lower quality feed as has been seen in many parts of the country this year, then perhaps it would be safer to consider a more reliable and flexible alternative. The results of our major trials into fermented wholecrop are highlighting the considerable benefits of this forage. The choice of crops combined with the wide range of cutting dates mean the feed can be tailored to a specific year, helping reduce the risk of poor quality forage production. At the same time, early harvesting means it suits most cropping rotations while ensuring forage is available when required. It can also satisfy the new 'Greening' requirements that you may have to comply with.

With the focus on milk from forage and reduced costs of production, perhaps it is time to give fermented wholecrop a long hard look?



*John Thomas  
Biotalk Regional  
Business Manager*



## Wholecrop delivers consistently

**Fermented wholecrop has been one of the foundations of a successful dairy business for 15 years, proving it's worth year on year.**

Tom Matthews farms at Common Farm, Uffington in the Vale of the White Horse. The farm is 850 acres with 450 acres of arable and 400 acres of grass. Soils are predominantly heavy clay loam.



Tom Matthews

He runs a herd of 230 Holstein/Friesian cows crossed with Scandinavian Reds, having been cross-breeding for seven years. Like all dairy farmers he is focussed on maximising the value of milk sold under his contract while maximising production from forage to help control costs.

### Exploit milk contract

The cows are managed as autumn and spring calving blocks to maximise the seasonality and he is looking to increase milk solids, currently averaging 4.2% fat and 3.3% protein. The cows are averaging 8750 litres with 2700 from forage.

Cows will typically graze from early April until late October and are buffer fed, mainly to support the spring calvers as they get back in calf. Autumn calvers are housed by night as they calve. Winter feeding is based on a TMR comprising 50:50 grass silage: fermented triticale wholecrop, HiPro Soya, home-grown urea treated wheat, ground maize, soya hulls, molasses, fat and minerals. Dairy compound is fed through a system of out of parlour feeders.

*"Around 25 years ago we decided to look at feeding mixed forages to increase intakes and production from forage," Tom comments. "Like many farmers we decided to try maize and grew it for around 10 years but never really got on with it.*

*"The initial varieties may have been suited to growing in Europe but did not get on with our soils. We had problems getting crops established and despite always going for early varieties, invariably found it difficult to establish follower crop.*

*"Although we were growing enough to feed 15-20kg/cow/day we found we were fighting at both ends of the season and struggling to get a quality crop. Maize is a costly crop to grow if you only get a mediocre crop, so we decided to try wholecrop as we thought it would be better suited to the farm and were already growing cereals."*

### Lower cost and more consistent

For the last 15 years, Tom has been growing 60-80 acres of winter triticale for fermented wholecrop, a similar acreage to that previously used for maize. The crop has averaged 12t/acre but in a good year can yield 15t/acre. This is enough to allow 17-20kg/cow/day throughout the winter with enough left for buffer feeding where it helps maintain butterfats.

Triticale works well on land not suited to wheat, spreads the harvest window reducing workload in peak harvest period and is cheaper to grow than wheat

although Tom stresses it is important to treat cereals for wholecrop the same as a combinable crop.

*"We look to cut the crop slightly green and cut it shorter as we find it ensiles better. The crop is treated with Biotalk Wholecrop Gold and clamped using Silostop oxygen barrier cling film. The result is a very stable feed with minimal waste which analyses well (see table). The clamp face is 30 feet wide and we aim to get across in a week. In the summer we only take half grabs to make sure we are covering the face quickly.*

*"The cows milk well on the forage and it really suits the farm, delivering consistent yields year after year. It comes off in good conditions, allowing us to follow it with oilseed rape. The only change to the diet has been to include ground maize.*

*"The other great advantage is flexibility. We can look at first cut grass and decide what stocks will be like for the winter. If we think we are going to be tight it is easy to harvest an extra field of wheat for wholecrop.*

*"If you grow maize and find stocks are going to be tight, your only options are to accept a yield reduction or get the cheque book out, something no-one wants to do with current milk prices. Wholecrop is helping us improve consistency and ensure good production from forage."*

	2014	2015
DM (%)	45.3	40.2
Crude protein (%)	9.3	8.0
D value (%)	65.4	65.5
ME (MJ/kgDM)	10.2	10.2
NDF (%)	36.4	32.9
Starch (%)	25.2	25.6



# I'm not going to tell you to cut costs...

**Roy Eastlake, Biotalk's National Technical Support Manager believes a focus on driving more efficient use of forage will help to reduce production costs in 2016 in a way that does not adversely affect the business. He says planning to do this must start now.**

All too often you see articles preaching that farmers need to cut costs of production in the current economic climate. To my mind, this supposes that it is possible to eliminate an aspect of expenditure because it delivers no value to the business, and that cutting the specific cost can be done with the entire saving being realised.

Now, sorry, but I just don't believe this. I don't know a single farmer who can 'hand on heart' say they can cut costs in this way because they spend money without expecting a return. However, I have spoken to lots of farmer groups over the past year and the conclusion I get is that farmers want to understand how to maximise the return on every item of expenditure they make. I believe that on all farms it is possible to improve efficiency to improve return on investment, and in doing so help reduce the cost of production.

Take forage as an example. Kingshay and AHDB Dairy data suggest there is an 11ppl difference in cost of production between top and average farmers ranked on cost of production per litre. Three areas contribute significantly to this difference – purchased feed costs per litre produced, the cost of extended heifer rearing, and poor health – a combination of increased mastitis and lameness coupled with poor fertility.



Roy Eastlake  
Biotalk National  
Technical Support  
Manager

If we produce more, better quality forage we can reduce purchased feed costs per litre and we can rear heifers more quickly with lower purchased feed inputs. In addition, more forage will improve rumen health which will be beneficial for cow health.

It sounds very simple, and if it was simple then surely everyone would be doing it? The truth is that on many farms there is a huge opportunity to improve both production and utilisation of forage to improve efficiency and so bring down costs of production.

But it will require a change of attitude and management based on **two** key elements.

## 1. Planning

As you sit reading this article have you planned how much forage you need, of what quality, how you will go about producing it and what actions can be taken at various stages of the year to ensure you deliver against the plan? If you haven't, the one thing you can be sure of is that you aren't on your own.

Far too few farmers will actually have a plan designed to produce their target yield from the minimum input of purchased feeds, instead reacting to what is in the clamp and managing around it.

The good news is that it need not take much to get in the position where you can achieve top 25% performance as the table shows.

Across a range of yield levels, producing just 1.9-2.4 tonnes more forage freshweight per cow is all that is required

Now is the time to develop a plan to achieve this and as a rule of thumb when considering silage, a target 12.5kgDM/cow/day at an average ME of 10.7 MJ is a good starting point. Start with the combination of crops to be grown. Will they deliver the forage needed?

How much flexibility do you have to modify the plan during the season? What is the risk of a shortfall in quality and quantity and how can you minimise this?

## 2. Attention to detail

Everything you do needs to be focussed on making the best quality silage you can and as much of it as possible. Assuming you make the 12.5kgDM/day, each extra 0.25 MJ on the energy content will be worth an extra half a litre from forage, or allow 0.25kg less concentrate to be fed.



*Make minimising waste a priority*

Fermentation quality is key to high quality silage and low levels of wastage. Review your silage making and decide what you can change to improve quality. It might be cleaning the clamps before refilling. It might be talking to the contractor about how you want crops cut and when. It could well be making changes to how the clamp is filled. It will certainly involve using a crop and condition specific inoculant and making sure the clamp is well sealed.

But, if you plan carefully and pay attention to detail, you could be well placed to reduce costs per litre next winter.

# New investment in state of art inoculant production facility

Lallemand, Biotal's parent company has opened a cutting edge silage inoculant production facility in Worcestershire which will ensure exceptional product quality, helping farmers produce better quality forage to help improve cost-effective production.

"The production of silage inoculants is a complex multi-stage process including fermentation, freeze drying and packaging and our UK facility means all stages are carried out on a single site," comments Production Director, Tim Nelson. "This allows us total control over every aspect of production and so set outstanding standards for quality control and traceability."

At the plant in Malvern, comprehensive quality assurance at all stages helps ensure the correct bacterial strains are reproduced and that inoculants contain the correct numbers of bacteria.

"If inoculants contain too few viable bacteria, or the wrong strain, they will not achieve the rapid and stable fermentation required for palatable, productive forages. Our new facility means we can closely monitor the process from start to finish, so ensuring all products will deliver exceptional results on farm.

"During our quality control checks we monitor the numbers of bacteria, ensure the correct strain is present while ensuring there are no contaminants.

"Unlike suppliers who purchase bacterial strains from third parties, our plant means we can track quality during the fermentation and freeze drying cycles ensuring products supplied meet the required specification. We can also ensure increased stability and improved product shelf life.

"This investment will ensure that farmers can have full confidence that Biotal inoculants will be fully effective on farm, helping them improve their own efficiency. At the same time it will allow us to continue to develop new products to help farmers meet new challenges."



## New bale wrap will boost big bale quality

**For the first time, farmers making big bale silage can take advantage of oxygen barrier technology previously restricted to clamps which will significantly improve fermentation quality.**

Biotal is the major UK distributor for Silostop Bale Wrap which brings a brand new technology to the big bale market which will benefit both contractors and end users.

"Silostop Bale Wrap is the only big bale wrap on the market which is a true oxygen barrier," comments Jérôme des Diguères, Product Development Manager with Silostop. "

Everyone knows oxygen is enemy number one for good fermentation and has to be kept out of clamps and bales. Silostop Bale Wrap is a 25 micron thin film which prevents the entry of oxygen into the silage bale. It is 100 times more effective than other brands of bale wrap on the market."

He says the superior fermentation will result in better quality silage which can lead to increased palatability and better nutrient content, together leading to higher dry matter intakes. At the same time, by reducing the flow of oxygen, the wrap will reduce dry matter losses by over 40% resulting in more usable feed.

"The wrap has big benefits for contractors too. Suitable for use with all round and square bale wrapping systems, it requires a lower number of wraps per bale which will reduce film use and can be a big time saver. Furthermore, there will also be lower recycling levels as a result.

"With the focus on higher production from forage, the new bale wrap is the biggest development in big bale technologies for many years."



Jérôme des Diguères  
Product Development Manager  
Silostop

## Dates for your diary

We are attending several shows over the next few months and would be delighted to meet you to discuss your forage and feeding plans.

Date	Event	Venue
1st March	Northern Broiler conference	Cedar Court Hotel, Bradford,
9th March	West Country Layer Association Conference	Exeter Race Course
10th – 11th March	Turkey Science Conference	Carden Park Hotel, Chester
10th – 11th May	Pig and Poultry Show	Stoneleigh
9th – 11th June	Royal Cornwall Show	Wadebridge Showground
6th -7th July	Livestock Event	NEC, Birmingham



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